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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,513	07/21/2003	Kenichi Fujita	030812	3785
23850	7590	10/21/2004	EXAMINER	
ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP			RONESI, VICKEY M	
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WASHINGTON, DC 20006				
ART UNIT PAPER NUMBER				
1714				

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/622,513	FUJITA ET AL.
	Examiner Vickey Ronesi	Art Unit 1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 21 July 2003.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-6 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-6 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>7/21/03</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Claim Objections

1. Claims 3 and 4 are objected to because the word “claim” on line 1 of each claim should be replaced with “claims.”

Claim 4 is objected to because the word “have” on line 2 of the claim should be replaced with “has.”

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-6 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 2, and 3 appear to improperly recite a Markush group. Consequently, it is impossible to determine which elements of the group are required by the claims. When materials recited in a claim are so related as to constitute a proper Markush group, they may be recited in the conventional manner, or alternatively. For example, if “wherein R is a material selected from the group consisting of A, B, C and D” is a proper limitation, then “wherein R is A, B, C or D” shall also be considered proper. See MPEP § 2173.05(h).

With respect to claim 3, the use of open claim language “comprising” suggests that other particle diameters may be included in the composition thereby rendering the scope of the claim indefinite.

With respect to claim 5, the use of the term “stated shape” on the last line of the claim is unclear since no shape has been stated by applicant in the claim.

Claim 6 is rejected for being dependent on a rejected claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 5, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Fisher (US 2002/0086926).

Fisher discloses an IR absorbing polyvinyl butyral composition comprising lanthanum hexaboride particles having a particle size less than 200 nm, preferably ranging from 5 to 200 nm (paragraph 0019), in an amount ranging from about 0.005 to about 0.1 wt % based on the entire composition (paragraph 0015) that is used as an interlayer in glass laminates (paragraph 0012).

Although Fisher’s composition is described in wt % and the present amounts are described in parts by weight per 100 parts of polymer, it is the examiner’s position that these ranges overlap, absent evidence to the contrary. With respect to claim 5, note paragraphs 0035 and 0036 where the polyvinyl butyral (PVB) composition is prepared by mixing PVB with a plasticizer and lanthanum hexaboride and then subsequently diluted with additional PVB resin.

In light of the above, it is clear that Fisher anticipates the presently cited claims.

4. Claims 1-3 are rejected under 35 U.S.C. 102(a) as being anticipated by Takeda (JP 2002-369629).

Pending a full English-language translation of JP 2002-369629, in setting forth this rejection, a machine translation has been relied upon.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Takeda discloses a heat-insulating layer comprising a heat-insulating filler such as lanthanum hexaboride having a particle diameter of 200 nm or less (paragraph 0027) and a resin such as acrylic resin, a polycarbonate resin, fluorine resin, and polyester resin (paragraphs 0033 and 0034).

In light of the above, it is clear that Takeda anticipates the presently cited claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fisher (US 2002/0086926) in view of Takeda et al (JP 2000-169765, cited on IDS dated 7/21/03).

The discussion with respect to Fisher as set forth in paragraph 3 above is incorporated here by reference.

Fisher discloses the use of lanthanum hexaboride as an IR absorbing material; however, it does not disclose the use of other lanthanide hexaborides and calcium hexaboride as presently claimed. Takeda et al discloses a sunlight-shielding coating solution that utilizes fine hexaboride particles to impart sunlight-shielding properties which include compounds $X\text{B}_6$ where $X = \text{La}$, Ce , Nd , Gd , Tb , Dy , Ho , Sm , Eu , Er , Tm , Yb , Lu , Sr , or Ca (abstract).

In view of Takeda et al's recognition that lanthanum hexaboride and other lanthanide hexaborides and calcium hexaboride are equivalent and interchangeable, it would have been obvious to one of ordinary skill in the art to substitute lanthanide hexaboride with any of the hexaborides disclosed by Takeda et al and thereby arrive at the presently cited claims. Case law holds that the mere substitution of an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known to the prior art, the substitution of one equivalent for another is not patentable. See *In re Ruff* 118 USPQ 343 (CCPA 1958).

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fisher (US 2002/0086926) alone or Fisher (US 2002/0086926) in view of Takeda et al (JP 2000-169765), as applied to claims 1, 3, 5, and 6 above, and further in view of Hall (EP 0 459 704).

Fisher does not disclose thermoplastic resins as presently claimed; however, Fisher discloses that other polymers which are used to form interlayer sheets of glass laminated could be substituted for the preferred PVB.

Hall discloses an impact-resistant windshield for pressurized aircraft and teaches that acrylic and polycarbonate energy-absorbing glass laminate interlayers provide improved impact properties at elevated temperatures than conventional energy-absorbing glass laminate interlayers such as polyvinylbutyral and polyurethane which only provide satisfactory performance at low and normal ambient temperatures (col. 1, lines 25-44).

Given that Fisher is open to thermoplastic resins other than PVB and given that Hall teaches the benefit of acrylic and polycarbonate interlayer in glass laminates, it would have been obvious to one of ordinary skill in the art to substitute the PVB of Fisher with an acrylic or polycarbonate resin and thereby arrive at the presently cited claim.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fisher (US 2002/0086926) alone or Fisher (US 2002/0086926) in view of Takeda et al (JP 2000-169765) and further in view of Hall (EP 0 459 704), as applied to claim 2 above, and further in view of *Handbook of Fillers*.

Fisher does not disclose that its hydrophilic hexaboride is surface-treated with a silane compound as presently claimed; however, PVB is a hydrophilic polymer.

Handbook of Fillers teaches that hydrophilic fillers do not easily combine with hydrophobic polymers and that by changing the filler's surface character from hydrophilic to hydrophobic with a silane compound increases the interaction between the filler and the polymer matrix thereby improving filler dispersion and rheological properties (page 312).

Therefore, if one substituted PVB of Fisher with a hydrophobic polymer such as those presently claimed and as discussed in paragraph 6 above, it would have been obvious to one of ordinary skill in the art to surface-treat its hexaboride filler with a hydrophobing agent such as a

silane compound to improve dispersion and rheological properties as taught by *Handbook of Fillers* and thereby arrive at the presently cited claim.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-5 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-4 and 12 of copending Application No. 10/660,745 (published as US PGPub 2004/0071957 A1). Although the conflicting claims are not identical, they are not patentably distinct from each other because of the reasons given below.

Appl. '745 discloses a heat radiation shielding component dispersion that, like the present master batch, comprises a polymeric material and a lanthanide hexaboride. The hexaboride is contained in an amount from 2 to 333 parts by weight based on 100 parts by weight of polymer, amounts that overlap the presently claimed 0.01 to 20 parts by weight of hexaboride based on 100 parts by weight of polymer.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

9. Claims 1-5 are directed to an invention not patentably distinct from claims 1-4 and 12 of commonly assigned Application No. 10/660,745. Specifically, see the rejection set forth in paragraph 8 above.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP § 2302). Commonly assigned Application No. 10/660,745, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications filed on or after November 29, 1999.

Correspondence

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vickey Ronesi whose telephone number is (571) 272-2701. The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

vr

October 19, 2004



Vasu Jagannathan
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